

REMARKS

Claims 1 - 13, 18, 23 - 50 and 54 have been canceled by a prior amendment, while claims 17, 22, 53 and 58 have been canceled by the subject amendment without prejudice or disclaimer of the subject matter thereof. Applicants reserve the right to pursue the subject matter of all canceled claims in continuation and/or divisional applications.

Claims 20 - 21 and 56 - 57 have been withdrawn from consideration due to a restriction requirement.

Claims 14, 51, 56 and 57 have been amended.

Claims 14 - 16, 19 - 21, 51 - 52, 55 - 57 and 59 - 64 are presently pending in the subject application, where claims 14 - 16, 19, 51 - 52, 55 and 59 - 64 have been examined and stand rejected.

In the Office Action dated September 9, 2005, the Examiner has rejected claims 14, 19 - 20, 51 and 55 under 35 U.S.C. §102(b) or 35 U.S.C. §102(e), and has rejected claims 14 - 16, 19 - 20, 51 - 52, 55 and 59 - 64 under 35 U.S.C. §103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

The Examiner has rejected claims 14, 19, 20, 51 and 55 under 35 U.S.C. §102(e) or 35 U.S.C. §102(b) as being anticipated by U.S. Patent No 6,248,077 (Elson et al.) or U.S. Patent No. 4,476,877 (Barker). Since claim 20 has apparently been withdrawn from consideration, the rejection with respect to this claim is moot. Briefly, the present invention is directed toward a temperature sensing device that measures the temperature of a fluid at selected locations along an IV fluid line. The device is secured to a selected portion of the IV line and includes a temperature sensor for measuring fluid flowing within that line. The device may be coupled to a

temperature display device to display the measured temperature. The temperature sensing device may be in the form of a fitting including a temperature sensor.

The Examiner takes the position that the Elson et al. and Barker patents each disclose the features within these claims.

These rejections are respectfully traversed. However, in order to expedite prosecution of the subject application, independent claim 14 has been amended and recites the features of: a metallic receptacle, wherein a substantial majority of the receptacle is fixedly disposed in the connection port and external of the passage and the closed distal end of the receptacle extends slightly beyond the distal end of the connection port and contacts fluid flowing within the passage; a temperature sensor to generate an electrical temperature signal indicating measured solution temperature to facilitate maintenance of a desired temperature for the medical solution; and at least one portion of the passage located proximally of the receptacle including the same transverse cross-sectional dimensions as at least one other passage portion located distally of the receptacle.

Independent claim 51 has been amended in a similar fashion and recites the features of: metallic thermal contact means, wherein a substantial majority of the thermal contact means is fixedly disposed in the fluid access means and external of the flow means and the closed distal end of the thermal contact means extends slightly beyond the distal end of the fluid access means and contacts fluid flowing within the flow means; temperature sensing means for generating an electrical temperature signal indicating measured solution temperature to facilitate maintenance of a desired temperature for the medical solution; and at least one portion of the flow means located proximally of the metallic thermal contact means including the same transverse cross-

sectional dimensions as at least one other portion of the flow means located distally of the metallic thermal contact means.

The Elson et al. patent does not disclose, teach or suggest these features. Rather, the Elson et al. patent discloses a system for sensing a characteristic of fluid flowing to or from the body of a human. The system includes a fitting with a passage extending therethrough and a boss extending from the fitting and including a port in communication with the passage. A receiver extends completely across the passage (e.g., See Fig. 2 and Column 4, line 61 to Column 5, line 11). The receiver is configured to receive a thermistor of a probe for measuring temperatures of fluids flowing through the passage (e.g., See Column 5, lines 35 - 37). A restriction is disposed at the receiver to restrict the flow passage (e.g., See Column 5, lines 18 - 20).

Thus, the Elson et al. patent discloses a receiver extending completely across the passage, as opposed to a substantial majority of the receptacle (or contact means) being fixedly disposed in a connection port (or fluid access means) external of the passage (or flow means) with the distal end of the receptacle (or contact means) extending slightly beyond the connection port (or fluid access means) distal end as recited in the claims. Further, the Elson et al. patent discloses a restriction formed at the receiver in the form of a shoulder or step (e.g., See Fig. 2), where the passage on each side of the receiver has different cross-sectional dimensions. Accordingly, the Elson et al. patent does not disclose, teach or suggest at least one passage portion on each side of the receiver having the same cross-sectional dimensions as recited in the claims.

Although the Elson et al. patent discloses an alternative embodiment with a uniform passage (e.g., See Fig. 5), this embodiment employs a rubber receiver that is stretched a

substantial distance into the passage (e.g., See Column 5, lines 52 - 54 and Column 6, lines 1 - 5). Accordingly, this embodiment does not disclose, teach or suggest a metallic receptacle (or metallic thermal contact means) or, for that matter, a substantial majority of the receptacle (or contact means) being fixedly disposed in a connection port or fluid access means external of the passage (or flow means) with the distal end of the receptacle (or contact means) extending slightly beyond the connection port (or fluid access means) distal end as recited in the claims. In addition, the Elson et al. patent teaches away from the present invention by disclosing that the projection of the receiver into the flow passage (i.e., completely across or a substantial distance into the passage as discussed above) creates turbulence to assist in heat transfer (e.g., See Column 2, lines 41 - 44). Accordingly, it would not be obvious to merely modify the Elson et al. patent to attain the claimed invention.

Further, the Elson et al. patent discloses that the fitting is connected at one end with a syringe to enable the temperature of injectate flowing from the syringe to be measured by the probe within the fitting. The measured temperature is utilized to calculate a temperature drop in order to determine a cardiac output (e.g., See Fig. 1; Column 1, lines 11 - 22; and Column 4, lines 42 - 60), as opposed to facilitating maintenance of a medical solution at a desired temperature as recited in the claims.

The Barker patent similarly does not disclose, teach or suggest the above-discussed features recited in the independent claims. Rather, the Barker patent discloses a temperature sensing device for use in a fluid flow system. The device includes a housing with a tapered lumen extending through the housing, an opening extending through the housing and a thermally conductive enclosure inserted within the opening. The thermally conductive enclosure extends

substantially fully across the lumen (e.g., See Fig. 2 and Column 3, lines 37 - 47). A thermistor temperature sensor is potted in a carrier to be received within the enclosure in order to determine the temperature of injectate flowing from a syringe through the lumen. The measured temperature is utilized to determine desired blood flow rate information (e.g., See Column 3, lines 59 - 65 and Column 4, lines 45 - 55).

Thus, the Barker patent discloses an enclosure extending substantially fully across the lumen, as opposed to a substantial majority of the receptacle (or contact means) being fixedly disposed in a connection port (or fluid access means) external of the passage (or flow means) with the distal end of the receptacle (or contact means) extending slightly beyond the connection port (or fluid access means) distal end as recited in the claims. Further, the Barker patent discloses a tapered lumen with constant narrowing (i.e., varying transverse cross-sectional dimensions along the length) from one end toward the other (e.g., See Fig. 2). Accordingly, the Barker patent does not disclose, teach or suggest at least one lumen portion on each side of the enclosure having the same cross-sectional dimensions as recited in the claims. In addition, the measured temperature is utilized to determine desired blood flow rate information, as opposed to facilitating maintenance of a medical solution at a desired temperature as recited in the claims.

Since the Elson et al. and Barker patents each do not disclose, teach or suggest the features recited in independent claims 14 and 51 as discussed above, these claims are considered to overcome the rejection.

Claims 19 and 55 depend, either directly or indirectly, from independent claims 14 and 51, respectively, and therefore, include all of the limitations of their parent claims. Accordingly, these dependent claims are considered to overcome the rejection for substantially the same

reasons discussed above in relation to their parent claims and for further limitations recited in the dependent claims.

The Examiner has rejected claims 15 - 16, 52 and 59 - 64 under 35 U.S.C. §103(a) as being unpatentable over the Elson et al. or Barker patents in view of U.S. Patent No. 3,940,742 (Hudspeth et al.). Briefly, the present invention is directed toward a temperature sensing device that measures the temperature of a fluid at selected locations along an IV fluid line as described above.

The Examiner takes the position that the Elson et al. and Barker patents each disclose the claimed features except for whether the temperature sensed by their respective cardiac output monitors is displayed, recorded or otherwise printed. The Examiner further alleges that the Hudspeth et al. patent teaches these features and that it would have been obvious to combine the Hudspeth et al. patent with either the Elson et al. or Barker patents to attain the claimed invention.

This rejection is respectfully traversed. Initially, claims 15 - 16, 52 and 59 - 64 depend, either directly or indirectly, from independent claims 14 or 51 and, therefore, include all the limitations of their parent claims. As discussed above, neither the Elson et al. nor Barker patents disclose, teach or suggest the features of: a substantial majority of the receptacle (or contact means) being fixedly disposed in a connection port (or fluid access means) external of the passage (or flow means) with the distal end of the receptacle (or contact means) extending slightly beyond the connection port (or fluid access means) distal end; at least one portion of the passage (or flow means) located proximally of the receptacle (or contact means) including the same transverse cross-sectional dimensions as at least one other passage (or flow means) portion

located distally of the receptacle (or contact means); and the measured temperature utilized to facilitate maintenance of a medical solution at a desired temperature as recited in the independent claims.

The Hudspeth et al. patent does not compensate for the deficiencies of the Elson et al. and Barker patents and similarly does not disclose, teach or suggest these features. Rather, the Hudspeth et al. patent discloses a data acquisition, storage and display system, and is merely utilized by the Examiner for an alleged teaching of displaying, recording and printing hard copies of sensed temperatures.

Since the Elson et al., Barker and Hudspeth et al. patents do not disclose, teach or suggest, either alone or in combination, the features recited in claims 15 - 16, 52 and 59 - 64 as discussed above, these claims are considered to overcome the rejection.

The Examiner has rejected claims 14 - 16, 19 - 20, 51 - 52, 55 and 59 - 64 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 1,479,451 (Buckstein) in view of the Elson et al. or Barker patents. Since claim 20 has apparently been withdrawn from consideration, the rejection with respect to this claim is moot. Briefly, the present invention is directed toward a temperature sensing device that measures the temperature of a fluid at selected locations along an IV fluid line as described above.

The Examiner takes the position that it would have been obvious to utilize the Barker fluid temperature sensor system in the Buckstein device and include the printing and recording functions of the Hudspeth et al. patent.

This rejection is respectfully traversed. As discussed above, neither the Elson et al. nor Barker patents disclose, teach or suggest the features recited in independent claims 14 and 51 of:

a substantial majority of the receptacle (or contact means) being fixedly disposed in a connection port (or fluid access means) external of the passage (or flow means) with the distal end of the receptacle (or contact means) extending slightly beyond the connection port (or fluid access means) distal end; at least one portion of the passage (or flow means) located proximally of the receptacle (or contact means) including the same transverse cross-sectional dimensions as at least one other passage (or flow means) portion located distally of the receptacle (or contact means); and the measured temperature utilized to facilitate maintenance of a medical solution at a desired temperature.

The Buckstein patent does not compensate for the deficiencies of the Elson et al. and Barker patents and similarly does not disclose teach or suggest these features. Rather, the Buckstein patent discloses a fluid administering device including a vacuum container with a vacuum bottle or Dewar flask filler. The container is sustained in an inverted position with delivery therefrom being effected through an outlet tube. The container carries measuring accessory means for indicating the volume and temperature of the delivered fluid. For ascertaining the temperature, a thermometer, preferably encased, is removably retained in a socket through which fluid is delivered in contact with the thermometer bulb on its way to the outlet (e.g., See Page 1, lines 33 - 63). The glass tube of the thermometer is encased in a metal shell for protection. The metal tube extends above a metallic closure plug removably threaded into the socket, where the plug is packed by a rubberized fabric washer to prevent leak (e.g., See Page 2, lines 88 - 98).

Accordingly, the Buckstein, Elson et al. and Barker patents do not disclose, teach or suggest, either alone or in combination, the features recited in independent claims 14 and 51, and

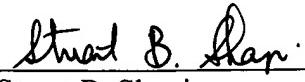
these claims are considered to overcome the rejection. In addition, claims 15 - 16, 19, 52, 55 and 59 - 64 depend, either directly or indirectly, from independent claims 14 or 51 and, therefore, include all of the limitations of their parent claims. These dependent claims are considered to overcome the rejection for substantially the same reasons discussed above in relation to their parent claims and for further limitations recited in the dependent claims.

Since none of the cited patent documents disclose, teach or suggest the features recited within claims 14 - 16, 19, 51 - 52, 55 and 59 - 64 as discussed above, these claims are considered to be condition for allowance.

In addition, claims 20 - 21 and 56 - 57 have been withdrawn from consideration due to a restriction requirement, where claims 56 and 57 have been slightly amended to further clarify the invention. Since claims 20 - 21 and 56 - 57 depend, either directly or indirectly, from independent claims 14 and 51, respectively, the independent claims are clearly generic with respect to the alleged species covered by the elected claims and claims 20 - 21 and 56 - 57. Accordingly, it is respectfully requested that claims 20 - 21 and 56 - 57 be considered and allowed by the Examiner since generic and parent claims 14 and 51 are considered to be in condition for allowance as discussed above.

The application, having been shown to overcome issues raised in the Office Action, is considered to be in condition for allowance and a Notice of Allowance is earnestly solicited.

Respectfully submitted,



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